

REMARKS

Claims 8, 9, 14, 15, 21, 23, 24, 28 and 33 have been amended. Claims 1-7, 10-13, 16-20, 38-42 have been previously cancelled. No new claims have been added. Therefore, claims 8-9, 14-15 and 21-37 are now are presented for examination. The following remarks are in response to the final Office Action mailed November 2, 2005.

35 U.S.C. § 103 Rejection

Claims 8-9, 14-16, 21-24, 28-29 and 33-34 stand rejected under 35 U.S.C. §103(a), as being unpatentable over Lempel et al., U.S. Patent No. 5,978,909 (“Lempel”) in view of *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347,349 (CCPA 1965) (“Larson”).

Lempel discloses that “the BTB and SBTB are *looked up to determine if any known branches reside in the line of code being fetched. Previously encountered branches are stored in the BTB and SBTB* based on the address of the last byte of the branch instruction.” (col. 5, lines 16-20; emphasis provided). Lempel further discloses that “*the SBTB tracks branch history* for those branches that are not stored in the BTB after they have been identified by the static predictor, but *before the branch instruction is executed and allocated in the BTB.*” (col. 5, lines 61-65, emphasis provided).

In contrast, claim 8, in pertinent part, recites that “the SBTB and the ABTB are included in a branch target buffer (BTB) to eliminated a speculative history from the ABTB.” (emphasis provided). Applicant submits that Lempel does not teach or reasonably suggest such a feature. In fact, the Examiner acknowledges in a final Office Action, mailed November 2, 2005 (the “Office Action”) that “Lempel has not taught [that] the SBTB and the ABTB are included in a branch target buffer (BTB).” (Office

Action, page 3, paragraph 7). The Examiner instead states in the Office Action that “Larson has taught . . . [that] merely making two separate elements into one single element is not patentable and an obvious modification of the reference.” (Office Action, page 4, lines 3-4).

However, including the SBTB and the ABTB in the BTB is not merely making two separate elements into one single element, because it allows speculative history to be eliminated from the ABTB. (see claim 8). Furthermore, the Specification states that “[t]he combination of the ABTB and the SBTB . . . seeks to improve the cost and performance of branch prediction, which essentially lowers cost and improves performance of a microprocessor.” (Specification, page 7, lines 9-11). The Specification further discloses that “allow[ing] the speculative history . . . to be eliminated from the ABTB . . . save[s] area that can be traded for performance.” (Specification, page 7, lines 12-14). Therefore, “including the SBTB and the ABTB in the BTB” (claim 8) is not “merely making two separate elements into one single element” (Office Action, page 4, line 3), but lowers cost and increases performance. Accordingly, Applicant respectfully requests that the rejection of claim 8 and its dependent claims be withdrawn.

Claims 14, 21, 28 and 33 contain limitations similar to those of claim 8 and accordingly, Applicant respectfully requests the rejection of claims 14, 21, 28 and 33 and their dependant claims be withdrawn.

Claims 25-27, 30-32 and 38-37 stand rejected under 35 U.S.C. §103(a), as being unpatentable over Lempel in view of Larson, in view of Applicant admitted prior art in the Background of the Invention (“Prior Art”).

With regard to claims 25-27, 30-32 and 35-37, they depend from one of independent claims 21, 28 and 33 and thus, include the limitations of the independent

claim from which they depend. Accordingly, Applicant respectfully requests the withdrawal of the rejection of claims 25-27, 30-32 and 35-37.

Conclusion

In light of the foregoing, reconsideration and allowance of the claims is hereby earnestly requested.

Invitation for a Telephone Interview

The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

Request for an Extension of Time

Applicant respectfully petitions for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17(a) for such an extension.

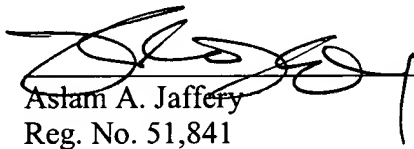
Charge our Deposit Account

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

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